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Quantitative and Qualitative Centrality of a Social Representation's Core Elements: The Use of the Basic Cognitive Schemes Model

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Abstract

The general aim of this research was to investigate the use of the Basic Cognitive Schemes (BCS) model in examining the qualitative vs. quantitative centrality of a social representation's (SR) core elements. Firstly, we examined the internal structure of the social representation of the European integration (Study 1, N = 71) according to Central Core Theory of the structural approach of social representations. Secondly, we investigated the qualitative vs. quantitative centrality of its core elements (Study 2, N = 106) using the BCS model. The study included young people from Eastern Romania enrolled in a Psychology undergraduate degree. The results permitted the identification of the elements defining the internal structure of the SR of the European integration among young Romanians. We identified five central elements with prescriptive functions (i.e., mobility, unity, opportunity, European funds, and civilization). Furthermore, after checking their qualitative and quantitative centrality using the BCS model, only three of them were confirmed as both qualitatively and quantitatively central. Thus, the results also underlined the importance of the BSC model in better understanding the relationships between the SR's internal elements. Theoretical and practical implications of the results are discussed.

Keywords: social representations, Central Core Theory, structural approach, Basic Cognitive Schemes model, qualitative and quantitative centrality, European integration

Non-Technical Summary

Background

The European integration has become a much-debated topic since Romania's first request to join the European Union in 1995. Despite its high media coverage, pre-integration surveys showed that Romanians had a poorly structured highly positive image of the European Union, where they minimized the negative consequences of the European integration and overestimated the positive ones.

Why was this study done?

The current research aimed to collect more in-depth data about young Romanians' representations of the European integration, e.g., beliefs, emotions, and behaviours that they associate with the European integration based on the new social practices as well as their own personal experiences.

What did the researchers do and find?

In Study 1, 71 Romanian university students, recruited after introductory psychology courses, completed a questionnaire consisting of a free association and a justification task. More specifically, participants had to write down the first five words that came to their mind when thinking about "European integration" and then justify their associations. These tasks allowed us to identify the discursive elements (core and peripheral) that organized the social representation (SR)

of the European integration. In Study 2, 106 Romanian university students filled in a similar questionnaire. Results from Study 1 indicated that the SR of the European integration included five core elements (i.e., mobility, unity, opportunity, European funds, and civilization). More specifically, young Romanians perceived the European integration as an opportunity for mobility and cooperation among EU members. It facilitates cultural integration leading to the fortification of the relations between EU members and the development of social and cultural exchanges. In addition, it leads to economic development through accessing European structural funds and being part of the European single market. Study 2 partially confirmed the results from Study 1 and provided us with a better understanding of the relationship between the core and peripheral elements structuring young Romanians' representation of the European integration.

What do these findings mean?

The present research findings highlight how young Romanians make sense of a new reality, i.e., the European integration that characterizes their world. Furthermore, their representation of the European integration is not a simple reproduction of the formal information produced by EU and mass media; it includes both objective characteristics of the integration process (e.g., mobility, structural funds) as well as personal experiences and prior representations of the European Union (e.g., solidarity, hopes of acceptance).

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The theory of social representations (SRT) studies the knowledge of common sense. It focuses on the organisation of the concepts acquired in the process of intra/intergroup communication and, thus, relates social groups to social knowledge. Social representations (SR) define a form of social knowledge and express a group's shared values, norms, and attitudes towards an object of representation (Moscovici, 1961, 1984). Thus, SRs can be viewed as a set of opinions, knowledge, and beliefs about social objects and shared by people belonging to the same culture, community, social category or group (Rateau, Moliner, Guimelli, & Abric, 2011). We may conceive them as societal/cultural representations (e.g., ideology, collective representations) or as organised individual representations updated each time individuals identify themselves with a specific social group. Moreover, SRs enable individuals to make sense of their social world, to better understand their behaviours within a group, and to justify their interactions with other social groups (Jodelet, 1991). As such, the internal structure of a SR is the result of a constant process of adjustment between a social object and a group's beliefs, values, and norms (Salmaso & Pombeni, 1986).

The Central Core Theory assumes that SRs have dual characteristics, being both stable and moving, rigid and flexible, and consensual, while being marked by strong inter-individual difference (Abric, 1993; Abric & Tafani, 1995; Moliner & Abric, 2015). SRs are hierarchically organised around central and peripheral elements; the latter being responsible for the global meaning of the SR (Abric, 1993; Lo Monaco, Piermattéo, Rateau, & Tavani, 2017).

The central elements are guided by the individuals' values and beliefs derived from their cultural and social standards; peripheral ones are grounded in the social and cultural history of a specific social group which renders these elements more responsive to changes in the immediate social and material environment (Rateau et al., 2011).

The core elements have a qualitative and a quantitative dimension. Abric (2003) insisted that the centrality of an element should not be defined by its mere presence in the central core, but also by its significance within that representation (Abric, 2003). In this regard, previous studies looked at the nature of the relations between the core elements and at the qualitative and quantitative centrality of these elements (Abric & Tafani, 1995; Guimelli & Rouquette, 1992; Vergès, 1994). In this vein, several centrality check methods were developed, i.e., the attribute-challenge technique and the call-into-question technique (Moliner, 1992, 1993), as well as the Basic Cognitive Schemes model (Flament & Rouquette, 2003).

The Basic Cognitive Schemes (BCS) model represents a key theoretical framework in understanding the relationships between the elements of a SR providing new research directions in the internal analysis of SRs. According to Flament and Rouquette (2003), social knowledge can be defined in the form of sequential structures of the type "A op B" where A corresponds to an inductor while B represents an association ("op" = formal operation defining a relation). The model consists of five basic cognitive schemes (BSCs) or "hyper-connectors" divided in 28 connectors: Lexicon ($n = 3$), Family ($n = 3$), Composition ($n = 5$), Praxis ($n = 12$), and Attributes ($n = 8$). The number of relationships established by each inductor with its associations is an indicator of the potential qualitative and quantitative centrality of core elements.

Numerous contemporary socio-political (e.g., European enlargement, European integration, Brexit) and economic changes (e.g., the introduction of the Euro) constitute debate central issues in people's everyday lives and major topics for scientific social and political research (Devos & Doise, 2012). In this vein, several studies examined the SRs of different EU objects such as *European identity* (Licata, 2003), *European integration* (Cristea, 2011); *defence politics and European security* (Mérand, 2006), *Europe* (Baugnet & Fouquet, 2005; de Rosa, Urgeghe, Bordini, & d'Ambrosio, 2007; Echebarria, Elejabarrieta, Valencia, & Villarreal, 1992; Kiss, Somogyi, & Pohl, 2006), and *European Union* (Curelaru, Cristea, & Negură, 2010). Their findings reinforce the idea that EU representations are actively constructed in everyday life through communication and social interactions and bear the signs of personal and social perspectives. However, very few of these studies focus on emerging objects of representations within a non-Western context.

The general aim of this research was to explore the feasibility of the Basic Cognitive Schemes (BCS) model in examining the qualitative vs. quantitative centrality of a social representation's (SR) core elements. In order to pursue this aim, we have chosen an emerging social object, i.e., European integration within a non-Western context, i.e., Romania, a new state member.

The European integration has become a much-debated topic since Romania's first request to join the European Union in 1995. Despite its high media coverage, pre-integration surveys showed that Romanians had a poorly structured highly positive image of the European integration, where they minimized the negative consequences of the European integration and overestimated the positive ones (Boza, Constantin, & Dârțu, 2002; Neculau & Constantin, 2002). These results may be explained by the lack of information; in 2006, 42% of the surveyed participants were completely uninformed about the EU principles and its institutions (European Commission, 2006). Interestingly, post-integration studies showed that Romanians expressed more critical attitudes towards European

integration (European Commission, 2007) and their expectations became more realistic (Gherasim & Boza, 2007; Gherasim, Dima, & Havârneanu, 2007). However, most of these surveys focus on general static attitudes and differences according to gender, age groups and professional status.

The current research aimed to collect more in-depth data about young Romanians' representations of the European integration, e.g., beliefs, emotions, and behaviours that they associate with the European integration based on the new social practices as well as their own personal experiences. Thus, we aimed to investigate the internal structure of the SR of the European integration among young Romanians according to Central Core Theory (Abric, 1993). We were also interested in examining the qualitative and quantitative centrality of the core elements (Flament & Rouquette, 2003; Guimelli, 2003; Guimelli & Rouquette, 1992) since previous studies on EU representations have rarely looked at it.

Study 1

According to the Central Core Theory (Abric, 1993), SRs are structured around central (core) and peripheral elements. The central elements are stable and resistant to contextual changes, whereas the peripheral ones are subject to interindividual and contextual variations (Rateau et al., 2011). In other words, central elements appear context-free whereas peripheral elements are more flexible and embedded in people's personal experience with the object of representation; hence, support contradictions. This dichotomy between central and peripheral elements leads to a hierarchical structure of people's cognitions/beliefs about the European integration. In this vein, we were interested in mapping out the relations between the central and peripheral elements of the SR of the European integration as well as their functions.

Method

Participants

Seventy-one first year psychology undergraduate students (56 women, 15 men) aged 19 to 30 years old ($M_{\text{age}} = 21.97$ years, $SD = 3.54$) were recruited after introductory psychology courses. Participants were rewarded using a system of course credits. The study consisted of filling in a paper-and-pencil questionnaire that lasted approximately 15 minutes. Data collection was done between April and May 2010.

Procedure

The Ethics Committee of our Department of Psychology approved the study. We invited the participants to a Psychology lab where the study took place. Upon arrival to the lab, we provided the participants with an information sheet that contained a full description of the study as well as details about anonymity, data confidentiality, and their right to withdraw from the study at any stage. Once participants signed the consent form, they filled in a paper-and-pencil-questionnaire consisting of two main tasks (i.e., free association task and justification task) and answered a few questions related to socio-demographic information (age, gender, year of study, field of study). The questionnaire was followed by a short debrief.

Measures

Free association task — The free association task is a fundamental method used to collect data about the content of SR (Abric, 1993). It has widely been used in the investigation of SR of numerous objects (Curelaru et al., 2010;

Piermattéo, Lo Monaco, Moreau, Girandola, & Tavani, 2014). It consists of associating words or expressions with a stimulus word corresponding to the object of representation and then ranking each association according to their importance in relation to the object of representation. In the current study, participants had to write down the first five words/expressions that came to their mind when they heard the stimulus word “European integration”. Then, they ranked the five associations from 1 - *the most important* to 5 - *the least important*. By crossing the frequency of appearance with the average importance of each association, it is possible to formulate assumptions about the central or peripheral status of each of these associations (Abrieu, 2003; Dany, Urdapilleta, & Lo Monaco, 2015).

Justification task — The justification task (di Giacomo, 1981) is usually conducted after the free association. It consists of asking participants to justify the associations they have generated. In this study, participants had to answer the following question: Considering the words/expressions you have listed during the previous task, please try to provide some justifications for your associations as follows: “I have associated Word 1 with *European integration* because...”. This task provides additional details on the connections between a stimulus word and its associations. It leads to a better understanding of the meaning that participants assign to each association and avoids semantic confusions during the data analysis process (Piermattéo et al., 2014).

Results and Discussion

Data Preparation

We created a database with all the associations (= units of analysis) produced by the participants ($N = 355$ units of analysis); grammatical auxiliaries (e.g., prepositions, articles) were excluded. Given that some of the associations provided by the participants had similar meanings (e.g., European integration, integration within the European Union) or shared the same semantic root (e.g., immigration, immigrants), we proceeded to a “data reduction” (Buschini & Cristea, 2018; Pawlowski & Jung, 2015). This was performed with EVOC2000 (Vergès, 1992), a textual analysis software. More specifically, associations with similar meaning or that shared the same semantic root were collapsed into the same unit of analysis. For example, we collapsed words such as immigrants or immigrant within one overarching unit of analysis “immigration”. After collapsing the associations with similar meanings or shared semantic root, the initial 355 associations were reduced to 100 associations (= units of analysis), with varying frequencies ($f_{\text{Min.}} = 2$; $f_{\text{Max.}} = 22$) and levels of importance (Min = 1; Max = 5; $M = 2.80$).

Hierarchical Evocations

In order to identify the elements within the internal structure of the SR of the European integration we performed a prototypical analysis (Vergès, 1994) using EVOC2000 (Vergès, 1992). The prototypical analysis consists of crossing the frequency of appearance and the average level of importance for each unit of analysis. For this, we only included the units of analysis that had a frequency of appearance equal or superior to four ($N = 25$ units of analysis). Performing this analysis allowed us to organise the units of analysis into four different categories: *high frequency and importance* (= core elements), *high frequency and low importance* (= first periphery), *low frequency and importance* (= second periphery), and *low frequency and high importance* (= *contrasted elements*). Median frequency of appearance ($Mdn = 10$) and average level of importance ($M = 2.80$) were used as thresholds to differentiate between high vs. low frequency/importance (see Table 1).

Table 1

The Frequency and Average Importance for All the Words/Expressions (N = 71 Participants)

Word/Expression	f	M	Word/Expression	f	M
Importance ≤ 2.80			Importance > 2.80		
Frequency ≥ 10			Frequency ≥ 10		
Mobility	22	2.59	Cooperation	17	3.41
Unity	22	2.36	Economic growth	13	3.38
Opportunity	14	2.78	Evolution	11	3.72
European funds	13	2.30	Intercultural relations	11	3.09
Civilization	10	2.60	Development	10	2.80
Frequency < 10			Frequency < 10		
Change	8	2.62	Freedom	9	2.88
Globalisation	8	2.25	Equality	7	3.71
Norms	8	2.25	Alliance	7	3.00
Prosperity	7	2.00	Economy	6	3.83
Euro	5	2.20	Power	6	3.66
Modernization	4	2.75	Uniformity	6	3.66
			Solidarity	6	2.83
			Security	5	3.60
			Acceptance	4	4.00

Note. f = frequency of the associated word; M = mean of importance.

The core of the SR of the European integration among young Romanians includes elements referring to the positive consequences of the European integration (i.e., *mobility, opportunity, European funds*) as well as elements describing some of the values promoted by the European Union (i.e., *unity, civilization*). The first periphery contains several prescriptive elements referring to social and economic consequences of the European integration (i.e., *social development, economic growth*). The second periphery elements translate into the negative consequences of the European integration (e.g., *globalization, the adoption of Euro, change*). Finally, the contrasted elements include associations related to the EU principles and values (i.e., *solidarity, freedom, equality, and acceptance*).

The internal structure of the SR of the European integration includes predominantly positive elements (e.g., *opportunity, freedom, economic growth*) and very few negative ones (e.g., *globalization*). Moreover, the core elements have prescriptive functions (e.g., people will be allowed to travel without visa, public institutions will have access to structural funds) while the peripheral ones have concretization functions (e.g., travelling without visa and structural funds will lead to personal and national economic growth).

Lexicometric Analysis

The text corpus provided by participants during the justification task was submitted to a lexicometric analysis using Lexico3 (Lebart & Salem, 1994). Lexico3 is a qualitative data analysis software intended to help researchers organise and analyse non-numerical data (e.g., interviews and focus-group scripts). More specifically, it allows the researcher to classify, sort and arrange textual data and to examine relationships in the data. Beyond identification of graphical forms, the software permits the study of the distribution of more complex units composed of form sequences: repeated segments, pairs of forms in relation of co-occurrence, which are generally less ambiguous in terms of content than the graphical forms that make them up (Lamalle et al., 2004).

A lexicometric analysis consists of identifying occurrences of lexical units (i.e., forms, segments, generalised types) in the different parts of the textual corpus. As a result, we were able to identify 511 units of analysis (i.e., expressions) which we then submitted to an automatic content analysis. The co-occurrence analysis performed with Lexico3 revealed that respondents organised their discourse about the European integration around three dimensions.

As we can see in Table 2, the first dimension represents 63% of the total discourse produced by the participants and refers to the consequences of the EU integration. It includes two sub-categories: *socio-political* (e.g. *mobility, new European rights, loosing national identity*) and *economic* consequences (e.g., *prosperity, economic growth, accessing European funds, taxes*). The second dimension represents 19% of the total content and refers mainly to how lay people define the EU integration (e.g., *adhesion*) and their general attitude towards this process. The third dimension represents 14% of the total content and includes descriptive elements concerning the EU symbols (e.g., *Euro, flag*) and principles defining the relations between the state members (e.g., *multiculturalism, exchange, unity*).

Table 2

Dimensions and Themes Defining Participants' Discourse About the European Integration (N = 511 Units of Analysis)

Category / Theme	<i>f</i>	%
EU integration's consequences	322	63.00
Socio-political consequences	176	34.40
Economic consequences	146	28.57
Definitions and beliefs	98	19.17
Definitions	66	12.91
Attitudes to EU integration	32	6.26
European Union	71	14.00
EU symbols	40	7.82
Principles	31	6.06

Note. *f* (%) = frequency of the units of analysis included in each theme (percentage of the total number of units of analysis).

In general, respondents mainly focus their discourse on their hopes, which translate into a positive view of the future. One of the main expected outcomes of the integration refers to economic development and thus, respondents expect higher incomes and economic prosperity. Additionally, respondents anticipate less bureaucratic procedures when it comes to travelling within EU (e.g., studying or working abroad, vacationing). Although participants anticipate that unity among European countries will lead to a stronger sense of belonging among Romanians and to a stronger European identity, they also express fear of losing their national identity and the values and traditions embedded in their culture.

We may conclude that the main themes and dimensions of the respondents' discourse clearly translate into the core and peripheral elements of their SR of the European integration underlining the communication functions of SR.

Study 2

According to Abric (2003), an element pertaining to the internal structure of a social representation can be qualified as central by its high frequency of appearance (*quantitative centrality*) as well as its capacity to establish a high number of diverse relations with the other elements within that representation (*qualitative centrality*). In this regard, previous studies provided support for the use of the BCS model in examining the quantitative and qualitative centrality of the core elements (Cárdenas & Rodriguez, 2006; Guimelli, 1994). Thereby, the aim of Study 2 was to investigate the quantitative and qualitative centrality of the core elements identified in Study 1 (i.e., *mobility, unity, opportunity, European funds, and civilization*) by using the BCS model. In addition, we believed the examination of the relations established by the five core elements would allow us to acquire additional information concerning their functions.

Method

Participants

One hundred and six first year undergraduates in Psychology (74 women, 32 men) aged 18 to 24 years old ($M_{\text{age}} = 19.93$ years, $SD = 1.18$) were recruited during an introductory Research Methods and Data Analysis course. They all volunteered to participate in our study in exchange for course credits. The study consisted of filling in a paper-and-pencil questionnaire that lasted approximately 1 h 30 minutes. Data collection was done between September and November 2010.

Procedure

The Ethics Committee of our Department of Psychology approved the study. Participants were approached during a Research Methods lecture and they were asked to restrain from interacting with each other while filling in the questionnaire. Each participant received an information sheet that contained a full description of the study as well as details about anonymity, data confidentiality, and their right to withdraw from the study. Once participants signed the consent form, they filled in a paper-and-pencil-questionnaire derived from the BSC model (Guimelli, 1994) and provided answers to several socio-demographic questions (age, gender, year of study, field of study). The questionnaire was followed by a short debrief.

Measures

Free association task — Before filling in the free association task, participants were provided with a short paragraph presenting the aim of the study (i.e., to examine lay perceptions and beliefs about the European integration) and similar findings from previous studies. These findings suggested that Romanians believe that European integration provided new opportunities for *mobility, access to structural funds, and interactions* with Western cultures and created a *sense of unity* among state members. This information depicted the five core elements identified in Study 1. After reading this information, participants had to write down the first three words/expressions that came to their mind when hearing five stimulus words identified in Study 1 as the core elements of the SR of the European integration (i.e., *mobility, unity, opportunity, European funds, and civilization*).

Justification task — Similar to Study 1, participants had to justify the associations they have generated for each of the five stimulus words. According to Guimelli (1994), this task helps participants to get a better understanding

of the relations between the stimulus words and associations and, more importantly, it prepares them for the following task.

Evaluation task — This task consists of evaluating the type of relation established by the stimulus words with their associations (Guimelli, 1994). More specifically, participants were invited to assess the type of relation using 28 connectors regrouped into five hyper-connectors and described within the BCS model (for more details, see Appendix). In total, participants responded to 420 items (5 stimulus words * 3 associations * 28 connectors).

Results and Discussion

The analyses performed in this study focus on the participants' responses to the evaluation task. In order to have a better understanding of the type and nature of the relations between the core elements and their functions within the representational field, we analysed the total valence of each element (Vt). The valence of an element – central or peripheral – underlines its activation degree within the SR of a specific group at a given moment and, for a specific object. It is reflected by the number of positive connections (= “yes” responses) established between that element and its produced associations (Guimelli, 1994; Rouquette & Rateau, 1998). Its value can vary from zero to one and it allows the researcher to distinguish between the central, peripheral and over-activated elements (= peripheral elements activated by a contextual effect). Higher values suggest central elements whereas lower ones are indicators of peripheral elements.

Table 3 presents the total valence (Vt) for each of the five core elements. Significant differences between these indexes, $F(4, 102) = 4.565$, $p < .002$, $\eta^2 = .005$, suggest that some of these elements have been falsely identified as central and could potentially be peripheral.

Table 3

Total and Partial Valences, Activation Index and Index Errors for Each of the Five Core Elements (N = 106 Participants)

Element	Mobility	Unity	Opportunity	European funds	Civilization
<i>n</i>	5061	5319	4872	5133	5464
Total valence (Vt)	0.56	0.59	0.54	0.57	0.61
Partial valence for praxis (Vp)	0.57	0.59	0.52	0.57	0.61
Partial valence for attributes (Va)	0.55	0.58	0.52	0.54	0.59
Activation index (λ)	0.90	0.88	1.00	0.93	0.85
Index error ($\Delta\lambda$)	0.08	0.09	0.08	0.08	0.11
Type of element ^a	Peripheral	Peripheral	Central	Central	Peripheral
	(0.90 < 0.92)	(0.88 < 0.91)	(0.92 < 1.00 < 1.08)	(0.92 < 0.93 < 1.08)	(0.85 < 0.89)

Note. *n* = number of “yes” responses; Vt = total *n* of positive relations / (28 connectors * 3 associations * *N* of participants); Vp = *n* / (12 connectors * 3 associations * *N* of participants); Va = *n* / (7 connectors * 3 associations * *N* of participants); $\lambda = Vt / (Vp^2 + Va^2)$; $\Delta\lambda = [(Vp - 0.5)^2 + Vp / 12] / 2 * Vp + [(Va - 0.5)^2 + Va / 7] / 2$.

^aFollowing Rouquette and Rateau (1998), central [$(1 - \Delta\lambda) \leq \lambda \leq (1 + \Delta\lambda)$], peripheral [$\lambda < (1 - \Delta\lambda)$] and over-activated [$\lambda > (1 + \Delta\lambda)$] elements were distinguished.

Although useful, the comparison of the total valence is not enough to distinguish between the core elements and those peripheral and/or over-activated (Rouquette & Rateau, 1998). In line with the authors' suggestions, we also calculated the partial valences corresponding to the Praxis (Vp) and Attributes (Va) hyper-connectors of the BSC model, the activation index (λ) and index error ($\Delta\lambda$). The partial valences for Praxis and Attributes refer to the

number of positive relations (= “yes” responses) established by a core element with its associations as defined by the connectors included in the two hyper-connectors (for more details, see [Appendix](#)).

[Table 3](#) shows that two core elements (i.e., *opportunity* and *European funds*) were pinpointed as central within the structure of the SR of the European integration while the other three elements (i.e., *mobility*, *unity*, and *civilization*) were peripheral. We may assume that these three elements were frequently presented in the media as part of the new practices related to Romania’s European integration, therefore, became highly salient (*quantitative centrality*) in the lay discourse about the European integration. None of the five elements was pinpointed as over-activated.

Furthermore, the analysis of the partial valence for Praxis and Attributes offers interesting details into the normative versus functional nature of the core elements ([Guimelli, 1998](#); [Rateau, 2002](#)) and helps distinguishing between three types of central elements ([Guimelli, 2003](#)). *Functional central elements* are activated in those individuals who have had contact with specific practices related to the object of representation. *Normative central elements* are activated when the individuals have only had few concrete experiences with the object of representation; therefore, they limit their evaluation of the object to a normative level strongly connected to the ingroup’s values. *Mixed central elements* have an essential role in recognizing the object of representation ([Guimelli, 2003](#)). Our findings suggest that *mobility*, *unity*, and *European funds* are functional central elements while *opportunity* and *civilization* are predominantly mixed central elements. Young Romanians considered themselves directly involved the process of the European integration through the adoption of specific practices such as accessing European funds or travelling abroad for studies or work.

General Discussion

Social Representations consist of informative, cognitive, prescriptive and normative elements that reflect the reality as perceived by individuals pertaining to different social groups. It is through these elements that people acquire the meaning of the world and then transmit it to others. SRs spontaneously originate in daily life allowing individuals to construct frameworks that facilitate their understanding of the reality and guide their interactions with the world.

The study of SR includes the study of the processes and dynamics within society (e.g., social, political and economic phenomena) and is focussed on the nature of human thinking and social interactions ([Moscovici, 1988](#)). Over the years, several groups of researchers have developed different theoretical approaches (e.g., Anthropological Approach, Central Core Theory, Basic Cognitive Schemes model) and methodological strategies (e.g., discourse analysis, free association) within the study of SRs ([Wachelke, 2012](#)).

The current research is anchored in the structural approach of SRs ([Abric, 1993](#)). According to this approach, socially shared knowledge refers to structures formed by interconnected elements whose functioning is regulated by specific rules. The structure of a SR includes basic cognitive units of meaning referring to a social object (e.g., democracy, citizenship, NATO, European Union) that form an integrated knowledge structure shared by a social group (e.g., social-democrats, conservatives). Our aim was to explore the SR of an emerging social object (e.g., European integration) within a non-Western context (e.g., Romania as a new member state) according to the

Central Core Theory (Abric, 1993) and to examine centrality of the core elements using the Basic Cognitive Schemes model (Flament & Rouquette, 2003; Guimelli, 2003; Guimelli & Rouquette, 1992).

Results from Study 1 indicated that the internal structure of the SR of the European integration included five core elements (i.e., mobility, unity, opportunity, European funds, and civilization). Core elements are usually guided by individual values and beliefs embedded in culture, social standards and rules. These elements determine the meaning that individuals assign to an object of representation and the way in which they organised their knowledge about a social object. Our findings suggested that young Romanians see the European integration as an opportunity for mobility and cooperation among EU members. It facilitates cultural integration leading to the fortification of the relations between EU members and the development of social and cultural exchanges. In addition, it leads to economic development through accessing European structural funds and being part of the European single market.

Core elements fulfil prescriptive functions, describing new social practices and norms associated with an object of representation, whereas peripheral ones fulfil concretization functions (Moscovici, 1988). More specifically, peripheral elements represent the interface between the core elements and the concrete situations in which a SR is elaborated. In our case, *civilization* (central) translates into *equity* and *freedom* (peripheral) as essential European values. *Solidarity*, *acceptance*, and *security* (peripheral) reflect the principle of *unity* (central) that defines the relations between the state members. *Economy* (peripheral) is closely connected with *economic development*, which is a consequence of accessing the *European funds* (central). These elements also reflect the respondents' personal experience with the object of representation (e.g., past and present travelling within EU).

The analysis of the respondents' discourse showed a strong focus on positive attitudes towards the European integration due to perceived economic outcomes; thus confirming previous findings among Romanian respondents (Gherasim & Boza, 2007; Gherasim et al., 2007; Neculau & Constantin, 2002). Positive attitudes towards the European integration are the results of the perceptions that individuals have of their current and future economic reality, and strongly correlate with support for political institutions (Eichenberg & Dalton, 1993; Gabel & Whitten, 1997; Norpoth, Lewis-Beck, & Lafay, 1991).

Additionally, respondents expressed hopes that unity among the state members will lead to a sense of belonging and a European identity among Romanians. Cichowski (2000) argues that European unity translates into stabilizing democratic norms as they begin developing in Central and Eastern Europe. Thus, we can assume that the respondents' focus on "developing a sense of unity" translates into hopes for the consolidation of the new political institutions and for overcoming the transition period experienced by the Romanian society since the fall of the communist regime. This is in line with other studies showing that individuals expressing positive attitudes towards EU integration believe that EU membership will decrease the chances of going back to an authoritarian regime (Wallace, 1990) and the consolidation of the "new political regime" (Tsoukalis, 1981).

In Study 2, the BCS model proved to be an efficient instrument in examining the relations between the core elements the SR of the European integration confirming previous findings (Cárdenas & Blanco, 2004; Cárdenas & Rodríguez, 2006; Guimelli, 1994). Our results partially replicated the findings from Study 1; however, they have the merit of distinguishing in a more refined manner between the quantitative and qualitative centrality. Using the BCS model, we were able to identify the core elements that developed numerous and diversified connections with other associations and thus, be considered quantitatively and qualitatively central to the SR of the European integration. Out of the five elements previously identified as central, only two of them (i.e., opportunity and European funds)

complied with the “quantitative and qualitative centrality” rule. More specifically, core elements such as *European funds* and social, cultural, economic, and political *opportunities* are embedded in the core definition of the European integration process. Furthermore, the BCS model offered valuable insights on the different properties and functions of the core elements. *Mobility*, *unity*, and *European funds* were functional central elements suggesting that participants’ direct experience with the social practices introduced after the European integration became an essential part of their SR of the European integration.

Limitations and Future Research

The current research focused on the SR of the European integration of a particular social group, i.e., young people enrolled in a Psychology undergraduate degree. Extensive research by Doise, Clémence, and Lorenzi-Cioldi (1993) debates the investigation of agreement between members of the same social group and/or different groups for a better understanding of the structure and dynamics of a SR. According to them, the core of a SR is built based on the overall agreement (= consensus) among individuals pertaining to the same social group but also on the anchoring of differences related to group membership. In this sense, future research should investigate not only the national consensus about the representation of the European integration but also the different group perspectives reflecting differences within the Romanian society (e.g., political orientation, age and education, occupation, experience abroad).

Furthermore, social representations and the lexical elements defining them are dynamic and change over time (Flament, 1994). The central core is more stable, and its elements are more resistant to changes; however, the peripheral elements are more malleable and thus, are more prone to changes, e.g., introduction of new social practices, interactions with other social groups or new personal experiences. In this sense, new research could investigate the role of social practices in explaining the dynamic of the SR of the European integration.

Conclusion

Social representations are not a faithful reflection of reality or a passive reproduction of the external world into an internal one. They are a global view of an object of representation developed by an individual or a social group who can restructure the reality in order to allow the integration of both objective characteristics but also of their own subjective beliefs and personal experiences. Our findings showed how young Romanians make sense of a new reality, i.e., the European integration that characterizes their world. Respondents’ SR of the European integration is not a simple reproduction of the formal information produced by EU and mass media. It includes both objective characteristics of the integration process (e.g., mobility, structural funds) as well as personal experiences and prior representations of the European Union (e.g., solidarity, hopes of acceptance).

Furthermore, our results provide theoretical support for the use of the BCS model in examining the qualitative and quantitative centrality of the core elements of a social representation. The model offered a detailed image of the relations between the inductors and their associations distinguishing between genuine central elements and those falsely identified as central elements and underlined the functional nature of some of these elements.

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Competing Interests

The authors have declared that no competing interests exist.

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References

- Abric, J.-C. (1993). Central system, peripheral system: Their functions and roles in the dynamics of social representations. *Papers on Social Representations*, 2, 75-78.
- Abric, J.-C. (2003). *Méthodes d'étude des représentations sociales* [Methods of studying social representations]. Toulouse, France: ERES.
- Abric, J.-C., & Tafani, E. (1995). Nature et fonctionnement du noyau central d'une représentation sociale: La représentation de l'entreprise [The nature and function of the central core of a social representation: The representation of an enterprise]. *Les Cahiers Internationaux de Psychologie Sociale*, 28, 22-31.
- Baugnet, L., & Fouquet, A. (2005). Europe in the French press: Study on the effects of context. *Psihologia Socială*, 16, 7-24.
- Boza, M., Constantin, T., & Dârțu, C. (2002). Identitate națională și identitate europeană [National and European identity]. In A. Neculau (Ed.), *Noi și Europa* (pp. 181-193). Iasi, Romania: Editura Polirom.
- Buschini, F., & Cristea, M. (2018). La délimitation des groupes dans l'étude des représentations sociales: Une comparaison méthodologique sur la représentation de Facebook [The delimitation of groups in the study of social representations: A methodological comparison of representation on Facebook]. *Bulletin de Psychologie*, 71, 483-503. <https://doi.org/10.3917/bupsy.553.0483>
- Cárdenas, M., & Blanco, A. (2004). Las representaciones sociales del movimiento Antiglobalización [The social representations of the anti-globalization movements]. *Revista Psicología Política*, 28, 27-54.
- Cárdenas, M., & Rodríguez, R. (2006). Utilizacion del modelo de esquemas cognitivos de base para la confirmacion del nucleo de una representation social: Analisis del movimiento antiglobalizacion [The use of the basic cognitive schemes in confirming the centrality of the core of a social representation: The analysis of the antiglobalization movement]. *Psicologia e Sociedade*, 18, 113-118. <https://doi.org/10.1590/S0102-71822006000300016>
- Cichowski, R. A. (2000). Western dreams, Eastern realities: Support for the European Union in Central and Eastern Europe. *Comparative Political Studies*, 33, 1243-1278. <https://doi.org/10.1177/0010414000033010001>
- Cristea, M. (2011). Romania's European integration and its media representations. *Psihologia Socială*, 27, 40-49.
- Curelaru, M., Cristea, M., & Negură, I. (2010). Ideological context and social representations of the European Union. *Annals of the University Alexandru Ioan Cuza, Psychology Series*, 19, 37-50.
- Dany, L., Urdapilleta, I., & Lo Monaco, G. (2015). Free associations and social representations: Some reflections on rank-frequency and importance-frequency methods. *Quality & Quantity*, 49, 489-507. <https://doi.org/10.1007/s11135-014-0005-z>

- de Rosa, A. S., Urgeghe, M., Bordini, I., & d'Ambrosio, M. (2007). Mosaic of images of Europe and its imaginary „center of gravity”: Results from the cross-national research program EuroSKYCompass. *Psihologia Socială*, 18, 7-34.
- Devos, T., & Doise, W. (2012). Identity and interdependence: For a social psychology of the European Union. In A. S. de Rosa (Ed.), *Social representations in the “social arena”* (pp. 200-209). London, United Kingdom: Routledge.
- di Giacomo, J.-P. (1981). Aspects méthodologiques de l'analyse des représentations [Methodological aspects of the analysis of representations]. *Cahiers de Psychologie Cognitive*, 1, 397-422.
- Doise, W., Clémence, A., & Lorenzi-Cioldi, F. (1993). *The quantitative analysis of social representations*. London, United Kingdom: Harvester Wheatsheaf.
- Echebarria, A., Elejabarrieta, F., Valencia, J., & Villarreal, M. (1992). Représentation sociale de l'Europe et identités sociales [Social representation of Europe and social identity]. *Bulletin de Psychologie*, 405, 280-289.
- Eichenberg, R. C., & Dalton, R. J. (1993). Europeans and the European Community: The dynamics of public support for European integration. *International Organization*, 47, 507-534. <https://doi.org/10.1017/S0020818300028083>
- European Commission. (2006). *Standard Eurobarometer 66*. Retrieved from http://ec.europa.eu/commfrontoffice/publicopinion/archives/eb/eb66/eb66_en.htm
- European Commission. (2007). *Standard Eurobarometer 68*. Retrieved from http://ec.europa.eu/commfrontoffice/publicopinion/archives/eb/eb68/eb68_en.htm
- Flament, C. (1994). Aspects périphériques des représentations sociales [Peripheral aspects of social representations]. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* [Structures and transformations of social representations] (pp. 85-118). Lausanne, Switzerland: Delachaux et Niestlé.
- Flament, C., & Rouquette, M.-L. (2003). *Anatomie des idées ordinaires – Comment étudier les représentations sociales* [The anatomy of ordinary ideas – How to study social representations]. Paris, France: Armand Colin/ VUEF.
- Gabel, M., & Whitten, G. D. (1997). Economic conditions, economic perceptions, and public support for European integration. *Political Behavior*, 19, 81-96. <https://doi.org/10.1023/A:1024801923824>
- Gherasim, L. R., & Boza, M. (2007). *Romanian student's attitudes towards European Union integration: The effects of explanatory style and social identity*. Paper presented at the 6th International Conference of PhD Students: Humanities, Miskolc, Hungary.
- Gherasim, L. R., Dima, A. M., & Havârneanu, C. E. (2007). Atitudinea față de integrarea României în Uniunea Europeană: Impactul nivelului de pesimism [Attitude towards Romania's European integration: The impact of the level of pessimism]. *Psihologia Socială*, 19, 7-21.
- Guimelli, C. (1994). La fonction d'infirmière: Pratiques et représentations sociales [Being a nurse: Practices and social representations]. In J.-C. Abric (Ed.), *Pratiques sociales et représentations* [Social practices and representations] (pp. 83-108). Paris, France: PUF.
- Guimelli, C. (1998). Differentiation between the central core elements of the social representations: Normative vs. functional elements. *Swiss Journal of Psychology*, 57(4), 209-224.
- Guimelli, C. (2003). Le modèle des Schèmes Cognitifs de Base (SCB): Méthodes et applications [The Basic Cognitive Schemes model: Methods and applications]. In J.-C. Abric (Ed.), *Méthodes d'étude des représentations sociales* [Methods of studying social representations] (pp. 119-143). Ramonville Saint-Agne, France: ERES.

- Guimelli, C., & Rouquette, M.-L. (1992). Contribution du modèle associatif des schèmes cognitifs de base à l'analyse structurale des représentations sociales [The contribution of the Basic Cognitive Schemes models to social representations]. *Bulletin de Psychologie*, 405, 196-202.
- Jodelet, D. (1991). *Madness and social representations*. Hemel Hempstead, United Kingdom: Harvester Wheatsheaf.
- Kiss, P., Somogyi, M., & Pohl, Z. (2006). Europe and the nation in lay discourse in Hungary. *Applied Psychology in Hungary*, 7-8, 22-39.
- Lamalle, C., Martinez, W., Fleury, S., Salem, A., Fracchiolla, B., Kuncova, A., ... Zimina, M. P. (2004). *Lexico 3: User's manual*. Retrieved from <http://www.tal.univ-paris3.fr/lexico/manuelsL3/L3-usermanual.pdf>
- Lebart, L., & Salem, A. (1994). *Statistique textuelle* [Textual statistics]. Paris, France: Dunod.
- Licata, L. (2003). Representing the future of the European Union: Consequences on national and European identifications. *Papers on Social Representations*, 12, 5.1-5.22.
- Lo Monaco, G., Piermattéo, A., Rateau, P., & Tavani, J. L. (2017). Methods for studying the structure of social representations: A critical review and agenda for future research. *Journal for the Theory of Social Behaviour*, 47, 306-331. <https://doi.org/10.1111/jtsb.12124>
- Mérand, F. (2006). Social representations in the European security and defense policy. *Journal of the Nordic International Studies Association*, 41, 131-152.
- Moliner, P. (1992). Représentations sociales: Schémas conditionnels et schémas normatifs [Social representations: Conditional and normative schemas]. *Bulletin de Psychologie*, 405, 325-329.
- Moliner, P. (1993). L'Induction par Scénario Ambigu: Une méthode pour l'étude des représentations sociales [Induction by ambiguous scenarion: One method to study social representations]. *Revue Internationale de Psychologie Sociale*, 2, 7-21.
- Moliner, P., & Abric, J.-C. (2015). Central Core Theory. In G. Sammut, E. Andreouli, G. Gaskell, & J. Valsiner (Eds.), *The Cambridge handbook of social representations* (pp. 83-95). Cambridge, United Kingdom: Cambridge University Press.
- Moscovici, S. (1961). *La psychanalyse, son image, son public* [The psychoanalysis, its image, its public]. Paris, France: PUF.
- Moscovici, S. (1984). The phenomenon of social representations. In R. Farr & S. Moscovici (Eds.), *Social representations* (pp. 3-70). Cambridge, United Kingdom: Cambridge University Press.
- Moscovici, S. (1988). Notes towards a description of social representations. *European Journal of Social Psychology*, 18, 211-250. <https://doi.org/10.1002/ejsp.2420180303>
- Neculau, A., & Constantin, T. (2002). Românii și integrarea europeană; radiografia unor atitudini [Romanians and the European integration: The radiography of their attitudes]. In A. Neculau (Ed.), *Noi și Europa* [Us and Europe] (pp. 13-28). Iași, Romania: Editura Polirom.
- Norpoth, H., Lewis-Beck, M. S., & Lafay, J.-D. (1991). *Economics and politics: The calculus of support*. Ann Arbor, MI, USA: University of Michigan Press.
- Pawlowski, S. D., & Jung, Y. (2015). Social representations of cybersecurity by university students and implications for instructional design. *Journal of Information Systems Education*, 26, 281-294.
- Piermattéo, A., Lo Monaco, G., Moreau, L., Girandola, F., & Tavani, J.-L. (2014). Context variations and pluri-methodological issues concerning the expression of a social representation: The example of the Gypsy community. *The Spanish Journal of Psychology*, 17, Article E85. <https://doi.org/10.1017/sjp.2014.84>

- Rateau, P. (2002). Procédure de substitution et nature des éléments d'une représentation sociale [The substitution procedure and the nature of the elements of a social representation]. *Les Cahiers Internationaux de Psychologie Sociale*, 54, 62-69.
- Rateau, P., Moliner, P., Guimelli, C., & Abric, J.-C. (2011). Social representation theory. In P. A. M. Van Lange, A. W. Kruglanski, & T. E. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 2, pp. 477-487). Thousand Oaks, CA, USA: SAGE.
- Rouquette, M.-L. (1994). Une classe de modèle pour l'analyse des relations entre cognèmes [A model for analyzing the relations between cognemes]. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* [Structures and transformations of social representations] (pp. 159-161). Lausanne, Switzerland: Delachaux et Niestlé.
- Rouquette, M.-L., & Rateau, P. (1998). *Introduction à l'étude des représentations sociales* [Introduction in the study of social representations]. Grenoble, France: PUG.
- Salmaso, P., & Pombeni, L. (1986). Le concept du travail [The concept of work]. In W. Doise & A. Palmonari (Eds.), *L'étude des représentations sociales* [The study of social representations] (pp. 196-207). Neuchâtel, Switzerland: Delachaux et Niestlé.
- Tsoukalis, L. (1981). *The European Community and its Mediterranean enlargement*. Sydney, Australia: Allen and Unwin.
- Vergès, P. (1992). L'évocation de l'argent: Une méthode pour la définition du noyau central de la représentation [Evocations of money: A method to define the core of a social representation]. *Bulletin de Psychologie*, 405, 203-209.
- Vergès, P. (1994). Approche du noyau central: Propriétés quantitatives et structurales [The central core approach: Quantitative and structural properties]. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* [Structures and transformations of the social representations] (pp. 223-253). Neuchâtel, Switzerland: Delachaux et Niestlé.
- Wachelke, J. (2012). Social representations: A review of theory and research from the structural approach. *Universitas Psychologica*, 11, 729-741.
- Wallace, W. (1990). *The transformation of Western Europe*. London, United Kingdom: Pinter.

Appendix

Table A.1

List of the 5 Hyper Connectors and 28 Connectors Described by the SCB Model (Flament & Rouquette, 2003)

Hyper connector / Connector	Standard expression
Lexicon	
SYN	A is synonym for B (e.g., Printed work SYN Book)
DEF	A can be defined by B (e.g., Psychoanalysis DEF Confession)
ANT	A is the contrary of B (e.g., Health ANT Sickness)
Proximity	
TEG	A is part of/is included in B (e.g., Dog TEG Mammals)
TES	A includes B (e.g., Dog TES Terrier)
COL	A belongs to the same general category as B (e. g., Terrier COL. Chihuahua)
Composition	
COM	A is a component of B (e. g., Piston COM Engine)
DEC	A has B as its component (e. g., Engine DEC Valve)
ART	A and B are components of the same thing (Piston ART Valve)
Praxis	
OPE	A makes B (e.g., Mechanic OPE Fixing)
TRA	A acts upon B (e.g., Fixing TRA Engine)
UTI	A uses B (e.g., Mechanic UTI Key)
ACT	B is the actor acting upon A (e.g., Fixing ACT Mechanic)
OBJ	A is an action applied to B (e.g., Fixing OBJ Engine)
UST	B is an instrument used to perform A (e.g., Dismantle UST Key)
FAC	B is someone thinking at the object designated by A (e.g., Engine FAC Mechanic).
MOD	B is an action that can be applied on A (e. g., Engine MOD Dismantle)
AOB	B in an instrument used to act over/in case of A (e. g., Bolt AOB key)
TIL	A can be used by B (e.g., Key TIL Mechanic)
OUT	A can be used to perform B (e. g., Key OUT Dismantle)
AOU	A is an instrument that can be used to perform an action to B (e.g., Key AOU Bolt)
Attributes	
CAR	A is always characterised by B.
FRE	A is frequently/often characterised by B (e.g., Depression FRE Insomnia)
SPE	A is sometimes characterised by B (e.g., Hygiene SPE Insufficient)
NOR	B is a normative attribute of A (e.g., Group members NOR Similar opinions)
EVA	B is an evaluative attribute of A (e.g., Group members EVA Similar opinions)
COS	A depends on B (e.g., Group cohesion COS Similar opinions)
EFF	A determines B (e.g., Common goals EFF Group cohesion)
NUL	No relation.

Note. Source: Rouquette, M.-L. (1994). Une classe de modèle pour l'analyse des relations entre cognèmes [A model for analyzing the relations between cognemes]. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* [Structures and transformations of social representations] (pp. 159-161). Lausanne, Switzerland: Delachaux et Niestlé.